

# **ESD PROTECTION APPARATUS AND METHOD FOR DUAL-POLARITY INPUT PAD**

5

## **ABSTRACT OF THE DISCLOSURE**

An ESD protection apparatus for dual-polarity input pad comprises a triple-well formed with a first, second and third regions to form an SCR structure. A first and second ground connection regions of opposite conductivity types are formed on the first region, a first and second input connection regions of opposite conductivity types are formed in the third region, and a bridge region is formed across the second region and extends to the first and third regions.

Under normal operation, the first, second, and third regions form two back-to-back diodes. Under positive polarity ESD event, breakdown is occurred between the bridge and first regions to thereby trigger an SCR circuit for positive polarity ESD protection. Under negative polarity ESD event, breakdown is occurred between the bridge and third regions to thereby trigger an SCR circuit for negative polarity ESD protection.